DETAILED ACTION

Response to Amendment

1. The following Office Action is responsive to the amendments and remarks received on November 10, 2009.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 22, 52, 56-59, 61, and 65-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuzaki et al. (US Patent No. 5,600,105).

With reference to claim 22, Fukuzaki et al. teaches a surface and cordless transducer system, the system comprising:

a surface (B) including a position resolving grid (31-1 to 31-4) (see column 7, lines 26-33, column 8, lines 64-65, and column 10, lines 12-21), and

a transducer (A) including a power receiving circuit (3), wherein the power receiving circuit responds to an electromagnetic field radiating from the surface and sends a transmit signal, which is received by the position resolving grid and used to determine a position of the transducer relative to the surface (see column 4, line 60 to column 5, line 8),

wherein the surface further includes a power transmission coil (33 and 51), which is distinct from the position resolving grid, for radiating the electromagnetic field, the

power transmission coil being a resonant power transmission coil and consisting of a plurality of overlapping coils (see column 9, lines 12-24 and column 12, lines 20-26 – the oscillator 33 generates an AC signal, which inherently must have some resonant frequency).

With reference to claim 52, Fukuzaki et al. teaches all that is required with reference to claim 22, and further teaches that the position resolving grid and the resonant power transmission coil, consisting of a plurality of overlapping coils, are arranged on top of one another to form the surface (see column 12, lines 20-26).

With reference to claim 56, Fukuzaki et al. teaches all that is required with reference to claim 22, and further teaches that the transducer is configured to perform a predefined modulation on a transmit signal to be sent to the position resolving grid (see column 5, lines 55-60 and column 6, lines 38-45).

With reference to claim 57, Fukuzaki et al. teaches all that is required with reference to claim 56, and further teaches that the predefine modulation comprises a time keying modulation or an on/off modulation (see column 5, lines 31-40 – the signal is modulated to be either on or off).

With reference to claim 58, Fukuzaki et al. teaches all that is required with reference to claim 22, and further teaches that the transducer includes a low current source that is configured to provide a constant transmit signal level (see column 8, lines 21-26 and 47-53).

With reference to claim 59, Fukuzaki et al. teaches a method for determining a position of a transducer relative to a surface, wherein the surface includes a position

resolving grid and the transducer includes a power receiving circuit, the method comprising:

causing the power receiving circuit to respond to an electromagnetic field radiating from the surface and to send a transmit signal (see column 6, lines 38-45), and

causing the position resolving grid to receive the transmit signal from the transducer to thereby determine a position of the transducer relative to the surface (see column 7, lines 26-33),

wherein the surface further includes a power transmission coil, which is distinct from the position resolving grid, the power transmission coil being a resonant power transmission coil and consisting of a plurality of overlapping coils (see column 9, lines 12-24 and column 12, lines 20-26), and the method further comprises:

causing the power transmission coil to radiate the electromagnetic field (see column 9, lines 12-24).

With reference to claim 61, Fukuzaki et al. teaches all that is required with reference to claim 59, and further teaches that the position resolving grid and the resonant power transmission coil, consisting of a plurality of overlapping coils, are arranged on top of one another to form the surface (see column 12, lines 20-26).

With reference to claim 65, Fukuzaki et al. teaches all that is required with reference to claim 59, and further teaches causing the transducer to perform a predefined modulation on a transmit signal to be sent to the position resolving grid (see column 5, lines 55-60 and column 6, lines 38-45).

With reference to claim 66, Fukuzaki et al. teaches all that is required with reference to claim 65, and further teaches that the predefined modulation comprises a time keying modulation or an on/off modulation (see column 5, lines 31-40 – the signal is modulated to be either on or off).

With reference to claim 67, Fukuzaki et al. teaches all that is required with reference to claim 59, and further teaches that the transducer includes a low current source that is configured to provide a constant transmit signal level (see column 8, lines 21-26 and 47-53).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 51 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzaki et al. in view of Oda et al. (US Patent No. 7,423,629).

With reference to claim 51, Fukuzaki et al. teaches all that is required with reference to claim 22, but fails to teach that the resonant power transmission coil comprises a transmission coil of the resonant inductive type.

Oda et al. teaches that the resonant power transmission coil comprises a transmission coil of the resonant inductive type (see column 7, lines 44-55).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a resonant inductive transmission coil to provide a signal to the transducer that could then be used to power the transducer.

With reference to claim 60, Fukuzaki et al. teaches all that is required with reference to claim 59, but fails to teach that the resonant power transmission coil comprises a transmission coil of the resonant inductive type.

Oda et al. teaches that the resonant power transmission coil comprises a transmission coil of the resonant inductive type (see column 7, lines 44-55).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a resonant inductive transmission coil to provide a signal to the transducer that could then be used to power the transducer.

7. Claims 53 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzaki et al. in view of Ronkka et al. (US Patent No. 6,002,387).

With reference to claim 53, Fukuzaki et al. teaches all that is required with reference to claim 22, and further teaches that the transducer is configured to generate DC operating power for operating the transducer based on a signal from the power receiving circuit in response to the electromagnetic field radiating from the power

transmission coil arranged on the surface (see column 6, lines 45-49 and column 15, lines 26-29).

Fukuzaki et al. fails to teach storing the generated DC voltage.

Ronkka et al. teaches storing the generated DC voltage (see column 2, lines 17-19).

It would have been obvious to one of ordinary skill in the art at the time of invention to store the DC voltage such that the transducer is able to provide power even when the surface is not transmitting a signal, i.e. when the surface is in receiving mode rather than transmitting mode.

With reference to claim 62, Fukuzaki et al. teaches all that is required with reference to claim 59, and further teaches that the transducer generates DC operating power for operating the transducer based on a signal from the power receiving circuit in response to the electromagnetic field radiating from the power transmission coil (see column 6, lines 45-49 and column 15, lines 26-29).

Fukuzaki et al. fails to teach storing the generated DC voltage.

Ronkka et al. teaches storing the generated DC voltage (see column 2, lines 17-19).

It would have been obvious to one of ordinary skill in the art at the time of invention to store the DC voltage such that the transducer is able to provide power even when the surface is not transmitting a signal, i.e. when the surface is in receiving mode rather than transmitting mode.

8. Claims 54, 55, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzaki et al. in view of Yamanami et al. (US Patent No. 5,028,745).

With reference to claim 54, Fukuzaki et al. teaches all that is required with reference to claim 22, but fails to teach that the resonant power transmission coil is tuned to a different frequency when inactive.

Yamanami et al. teaches that the resonant power transmission coil, when inactive, is configured to be tuned to a frequency that is different from its operating frequency so as to minimize an electromagnetic interference between the resonant power transmission coil and the position resolving grid (see column 5, lines 39-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to change the frequency of the transmission coil such that the position resolving grid does not detect a signal from the transducer in error, by detecting the signal from the transmission coil.

With reference to claim 55, Fukuzaki et al. teaches all that is required with reference to claim 22, but fails to teach that the resonant power transmission coil is configured to be squelched.

Yamanami et al. teaches that the resonant power transmission coil is configured to be squelched when the surface is receiving a transmit signal from the transducer (see column 5, lines 39-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to prevent the transmission coil from transmitting such that the position

resolving grid does not detect a signal from the transducer in error, by detecting the signal from the transmission coil.

With reference to claim 63, Fukuzaki et al. teaches all that is required with reference to claim 59, but fails to teach that the resonant power transmission coil is tuned to a different frequency when inactive.

Yamanami et al. teaches tuning the resonant power transmission coil, when inactive, to a frequency that is different from its operating frequency so as to minimize an electromagnetic interference between the resonant power transmission coil and the position resolving grid (see column 5, lines 39-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to change the frequency of the transmission coil such that the position resolving grid does not detect a signal from the transducer in error, by detecting the signal from the transmission coil.

With reference to claim 64, Fukuzaki et al. teaches all that is required with reference to claim 59, but fails to teach that the resonant power transmission coil is configured to be squelched.

Yamanami et al. teaches squelching the resonant power transmission coil when the surface is receiving a transmit signal from the transducer (see column 5, lines 39-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to prevent the transmission coil from transmitting such that the position

resolving grid does not detect a signal from the transducer in error, by detecting the signal from the transmission coil.

Response to Arguments

9. Applicant's arguments with respect to claim 22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILANA SPAR whose telephone number is (571)270-7537. The examiner can normally be reached on Monday-Thursday 8:00-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571)272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

ILS